Stretch Frisbees

Background of the Invention

The present invention relates to frisbees. More particularly, although not exclusively, the invention relates to an elastic frisbee designed to be catapulted by hand and to convert stored elastic energy into kinetic flying energy as if despatched by a slingshot.

Children have played with slingshots for many years. A slingshot traditionally comprises a Y-shaped bracket and an elastic band mounted between the top extremities of the bracket. A small object is held against the elastic band, which is then drawn back and released to propel the object through the air. That is, the potential energy stored in the stretched elastic band is converted to ballistic kinetic energy of the small object.

Frisbees have also been around for many years. These are circular in shape and are fabricated from plastics or other material and resemble an inverted saucer. When a frisbee is despatched by correct throwing, it spins upon its central axis during its trajectory through the air in a floating manner.

Traditional frisbees are fairly large objects not lending themselves to being carried in one's pocket.

Object of the Invention

It is the object of the present invention to provide a frisbee that can be despatched by hand in a manner that converts frisbee-stored energy into ballistic kinetic energy so as to fly through the air without the need for a separate slingshot or other external propeller.

Disclosure of the Invention

There is disclosed herein a frisbee comprising:

a body formed of material capable of stretching elastically and converting stored elastic energy therein into ballistic kinetic energy when despatched by hand.

Preferably the body is formed of a material capable of stretching beyond twice its relaxed length.

Preferably the frisbee comprises a gripping aperture adjacent its periphery.

Brief Description of the Drawings

Preferred forms of the present invention will now be described by way of example with reference to the accompanying drawings, wherein:

Figure 1 is a schematic perspective illustration of a stretch frisbee in a relaxed state,

Figure 2 is a schematic perspective illustration of the stretch frisbee of Figure 1 partially stretched,

Figure 3 is a schematic perspective illustration of the stretch frisbee of Figure is 1 and 2 in a very stretched state,

Figure 4 is a schematic perspective illustration of the frisbee of Figures 1 to 3 just after being despatched by hand,

Figures 5 and 6 are schematic perspective illustrations of the frisbee during its trajectory,

Figures 7 to 12 are schematic perspective illustrations of alternative frisbee shapes,

Figure 13 is a schematic cross-sectional illustration of the frisbee of Figure 12 taken at XIII-XIII in that figure, and

Figures 14 to 16 are schematic perspective illustrations of further alternative frisbee shapes.

Description of the Preferred Embodiments

In the accompanying drawings there is depicted schematically a number of stretch frisbees, each typically formed as a moulding of a soft elastic material such as soft natural rubber or those thermoplastic rubbers (TPR's) that are soft and highly elastic. The material would preferably be capable of elastic elongation of a few hundred percent, and display a Shore A hardness of say 10 or less. A gelatinous composition produced by a melt blend of a copolymer and plasticising oils might be appropriate. Such compositions are disclosed in US Patent Number 4,618,213 to John Y. Chen.

Figures 1 to 6 show a frisbee that in its relaxed state takes the form of a circular disc 10 having an aperture 11 near its periphery. The aperture is in the form of a slit or hole that can open out when the frisbee is stretched by hand.

The frisbee shown in Figure 7 is oval-shaped when relaxed and also includes a slit or hole 11 near its periphery.

Figure 8 depicts a frisbee that is hexagonal in its relaxed form, having a slit or aperture 11 near one of its corners.

The frisbee of Figure 9 has an extension 12 within which

there is a slit 11.

The frisbee of Figure 10 is hat-shaped having a slit 11 in its rim.

The frisbee of Figure 11 is shaped somewhat like a cross section through the centre of a piece of fruit - having apertures 13 spaced around a centre-piece 14 from which bridges 15 extend between the apertures 13 to a peripheral rim. There is a slit 11 in the peripheral rim.

The frisbee of Figures 12 and 13 has a flat centre plate 16 and an integral ring 17 of increased thickness thereabout. There is a slit 11 through the centre plate adjacent to the ring.

Further alternative designs are shown in Figures 14 to 16, these being shaped like a fan blade, clover-shaped and pentagonal respectively and each having a slit or aperture 11 near a peripheral edge.

The frisbees would typically have a thickness of a view. The diameter of each frisbee might range from a few centimetres to several tens of centimetres. The slit 11 can be cut through the disc at a position close to its periphery.

The frisbees are intended to be foldable to enable easy

pocket-insertion if made in the larger sizes.

In order to despatched a frisbee, reference is made to Figures 1 to 6. The thumb or finger of one's hand is pushed through the slit 11 with the palm of that hand facing away from the player's body. The opposite end of the frisbee is then grasped and drawn back so as to stretch the frisbee as indicated by arrows A in Figures 2 and 3. The frisbee is then aimed and released so as to be despatched in the direction indicated by arrow B in Figure 4. After practice, a spin can be induced in the frisbee as shown by arrows C in Figures 5 and 6. Elastic energy that is stored in the frisbee in the configurations depicted in Figure 3 is converted into rotational ballistic kinetic energy in use - providing entertainment to the user - if so inclined.

When high-speed rotation is induced in the frisbee, centrifugal forces will cause radial expansion of the frisbee. The embodiment of Figure 11 has a high rotational mass moment of inertia by virtue of the apertures 13 and the narrow radical bridges 15 will stretch due to centrifugal forces of the periphery. The embodiment of Figures 12 and 13 also has a high rotational mass moment of inertia by virtue of the thickened rim 17 and will also expand radially in flight under the influence of centrifugal forces.

It should be appreciated that modifications and alterations obvious to those killed in the art are not to be considered as beyond the scope of the present invention. For example, materials other than those specifically mentioned might be adopted.